

L 23469-66 ACC NRI AP6		SOURCE COI	DE: UR/0016/65/000/009	/0003/000
AUTHOR: Tim	akov, V. D.; Skavronskaj ute of Epidemiology and	ya, A. G.; Pokrovs	skiy, V. N.—Pokrovsky, ni Gamaleya, AMN SSSR	v. N. 38
TTTLE: Mech	anism of the mutagenics	action of 5-bromo	uracil '	12
SOURCE: Zhu	rnal mikrobiologii, epi	demiologii i immu	nobiologii, no. 9, 196	i, 3~6
ABSTRACT: To mutants form 5-bromouraci Epidemiologi 1964). Chrotion of DNA culture: the indicated to DNA rather sisted of r	DNA, RNA, streptomycin ound he mucleotide compositived from an S. typhimuril was studied (cf. V. N. i i Immunobiologii Volumatographic separation of the mutants was the esame bases were present the mutation mechanithan in composition. The splacement of one nucleotine with 5-bromouracil, osine paid was then represent	on of DNA from st um No 70 culture Pokrovskiy, Zhu 41, No 1, 92, 196 indicated that th same as that of I at, while 5-bromou ism involved change ne changes in strate otide pair by another	reptomycin - resistant under the action of arnal Mikrobiologii, 54; Vol 41, No 7, 51, ne nucleotide compositions of the initial aracil was absent. This ges in the structure of acture presumably conther due to faulty cours. Friz /Fries/. The	5
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	vice	versa	. It	was	shown	in form	er wor	k by P	okrovsk	iy th	at 5-b	romoura sition	of DNA	
	in e	xertin	g its	muca	agenre	TOOTATO		hau and	avenine	mita	tion.	but not	into	
	that	of RN	A of	the c	cella.	Orig.	art. h	nas: 1	figure	and	l tabl	e. [JP	rsj .	
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14.									4			4 · .		

TIMAKOV, V.D.; SKAVRONSKAYA, A.G.; POKROVSKIY, V.N.

Mechanism of the mutagenic action of 5-bromuracil. Zhur.mikrcbicl.,

epid. i immun. 42 no.9:3-6 S 165.

(MIRA 18:12)

1. Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR. Submitted August 5, 1964.

TIMAKOV, V.D.; KAGAN, G. Ya.

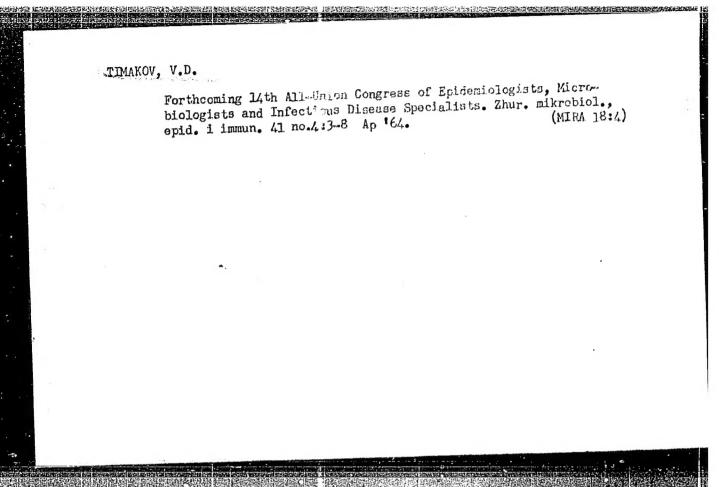
Pathogenicity of L-form bacteria and of the family Mycoplasmataceae and their role in infectious pathology. Report No. 2: Significance of the micro-organism of the family Mycoplas, ataceae (PPLO) in infectious pathology. Zhur. mikrobiol., epid. i immun. 43 no. 1: 11-17 Ja '66 (MIRA 19:1)

1. Institut epidemiologii i mikrobiologii imeni Gemelei AMN SSSR. Submitted July 28, 1964.

TIMAKOV, V.D.; KAGAN, G.Ya.

Results and perspectives of the study on L-form bacteria and the family Mycoplasmataceae. Vest. AMN SSSR 20 no.8:3-12 '65.
(MIRA 18:9)

1. Institut epidemiologii i mikrobiologii imeni N.F.Gamalei AMN SSSR, Moskva.



KAMENETSKIY, L.M., inzh.; TIMAKOV, V.V., inzh.

Automatic feed of carding machines. Wekh. 1 avtom.proizv. 19
no.2:13-15 F '65.

(MIRA 18:3)

PALENICHKO, Z.G.; TIMAKOVA, M.N.

Hydrobiological characteristics of Kuz Bay in the Pomorskiy coastal region of the White Sea. Mat. po kompl.izuch.Bel.mor. no.1:381-390 (MLRA 10:8)

l.Bilmorskaya biologicheskaya stantsiya Instituta biologii Karel'skogo filiala AN SSSR. (Kuz Bay--Marine biology)

USSR / General Biology. General Hydrobiology.

B-6

Abs Jour

: Ref Zhur - Biol., No 12, 1958, No 52476

Author

: Palenichko, Z. G.; Timakova, M. N.

Inst

: AS USSR

Title

: Hydrobiological Characteristics of the Kuz Bay on the

White Sea Coast.

Orig Pub

: Materialy po kompleksn. izuch. Belogo morya. I. M.-L.

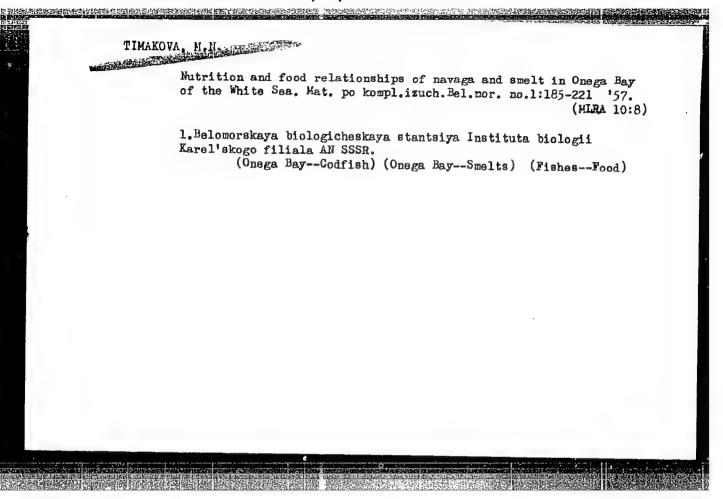
AN SSSR, 1957, 381-390.

Abstract

: A short description of bay hydrobiology; characteristics of the varietal composition and distribution of zooplankton, phyto- and zoobenthos; qualitative data on the feeding of polar and river flounder, navaga, aretic stickleback, and whitefish, and also a short survey of the fish industry

and of sea bottom flora. -- N. I. Kashkin.

Card 1/1



TIPAKOVA, ILE.

"Food and Feeding Selationships Petwsen Dorse and Smelt in the Chezhskiy Pay of the White Sea." Cand Biol Sci, Karelo-Finnish State U: Inst of Piology of the Darelo-Finnish Affiliate, Acad Sci USSE, Petrozavodsk, 1953. ("ZhBiol, No l, Jan 5)

Survey of Scientific and Technical Dissertations Defended at UISR Higher Educational Institutions (13) SO: Sum. 500, 20 Jul 55

NIKLTIH, V.D.; YAKIMETS, Ye.M.; TIMAKOVA, N.A.; RAL'K., V.A.; SHABASHOVA, N.V.; TRIBUNSKIY, V.V.

的。 第14章 1450年,1450年,1450年,1450年,1450年,1450年,1450年,1450年,1450年,1450年,1450年,1450年,1450年,1450年,1450年,1450年,1450年,1

Preparing chelate compounds of ethleneilaminetetrancetic acid with the cations of certain metals and methods of their analysis. Trudy Wrsl.politekh.inst. no.130:94-103 163.

(MIPA 17:10)

等,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人的人,我们就是一个人的人的人,我们就是一个人的人的人,我们就是一个人的人的人, "我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人的人,我们就是一个人的人的人,我们就是一个人的人,我们就是一个人的人,我们就是一

TIMAKOVA, N.V.

Mechanism of the primary stages of the interaction of phage X174 with Escherichia coli C. Zhur.mikrobiol., epid. i immum. 42 no.12:97-101 D '65.

(MIRA 19:1)

1. Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR.

USSR / Human and Animal Morphology (Normal and Patho- S-3 logical). Digestive System.

Abs Jour: Ref Zhur-Biol., No 17, 1958, 79054.

Author: Timakova, Z. F.

Inst : Not given.

Title : Some Experimental Observations on the Exsection

of the Mesentery at Different Levels from the

Region of the Intestine.

Orig Pub: Sb. nauchn. rabot. Sverdl. otd. Vses. o-va

anatomov, gistologov i embriologov, 1957, vyp. 1,

66-69.

Abstract: During resection of the mesentery for a length

of 10 cm in the immediate area of the intestine, dogs perished from gangrene of the intestinal wall or from peritonitis. Removal of the mesentery of the same length but closer to the root

Card 1/2

14

USSR / Human and Animal Morphology (Normal and Patho- S-3 logical. Digestive System.

PARTICINATION TO THE PARTICIPATION OF THE PROPERTY OF THE PROPERTY OF THE PARTICIPATION OF TH

Abs Jour: Ref Zhur-Biol., No 17, 1958, 79054.

Abstract: by 1.5 cm and more did not lead to the impairment of blood circulation. During resection of the mesentery by withdrawing 10.5 cm from the region of the intestine, the dogs lived with 25 cm of the intestine excluded from nourishment. Thus, the closer the mesentery is removed from the intestine, the greater the danger of necrosis.

Card 2/2

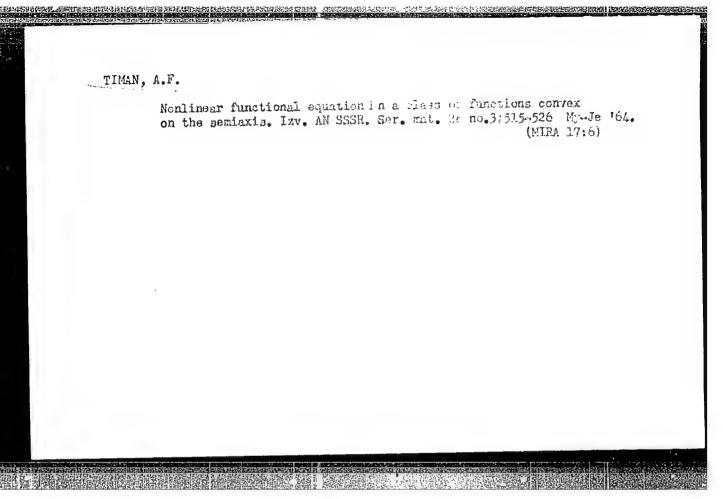
TIMAN, A.; SINEV, D., starshiy inzh. po ratsionalizatsii i novoy
tekhnike

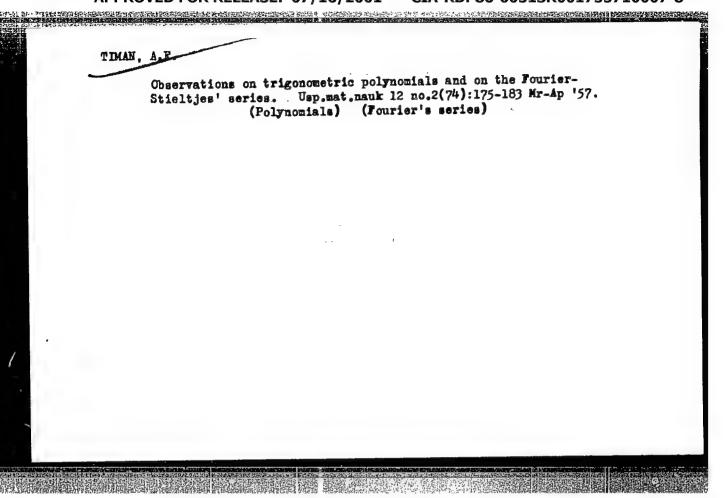
New drilling rig. Neftianik 7 no.1:16 Ja. '62.

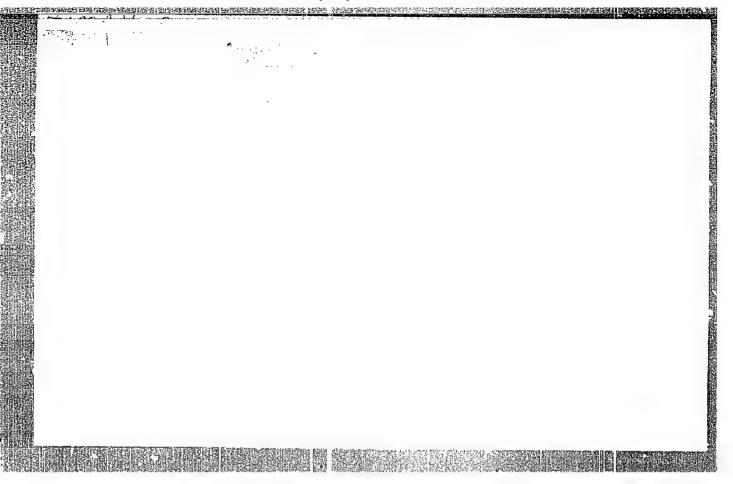
(MIRA 15:2)

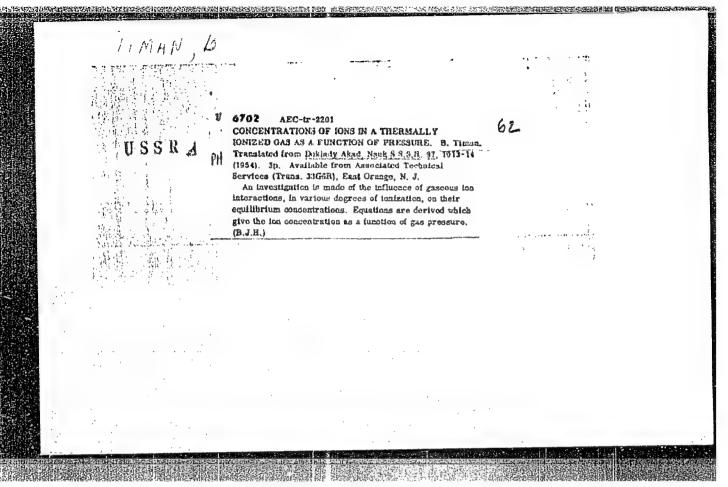
1. Glavnyy inzh. Sterlitamakskoy geologopoiskovoy kontery (for
Timan).

(Oil well drilling rigs)









TIMAN. A.B.

Using the "Ufimets" rig for drilling exploratory wells in (WIRA 10:10)

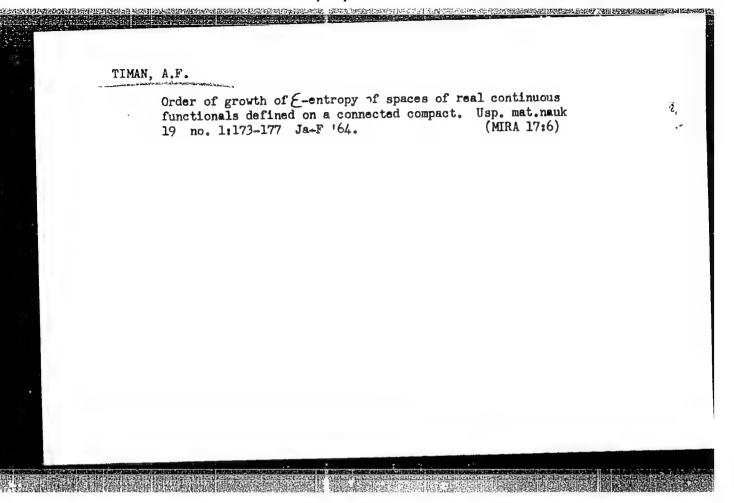
Using the "Ufimets" rig for drilling exploratory southern Bashkiria. Neftianik 2 no.8:3-4 Ag 157. (MIRA 10:10)

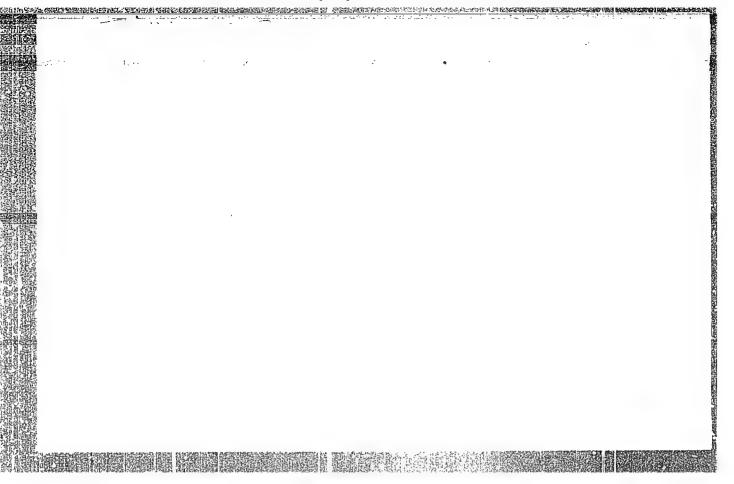
1. Glavnyy inzhener Sterlitamakskoy geologo-poiskovoy kontory tresta Bashvostoknefterazvedka.

(Bashkiria--Petroleum geology--Equipment and supplies)

	Control of the Contro	
7	Transactions of the Third All-union Mathematical Congress (Congress)	Cont. Moscow.
	Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel stvo An SSSR, Mostow, There are 4 references, 2 of which are English, 1 is USSR, ar 1 French.	nd
	Temlyakov, A. A. (Moscow). Integral Representation of Function of Two Complex Variables.	lons 105
	Timan, A. F. (Dnepropetrovsk). Cn a Linear Approximation Processes of Periodic Function by Trigonometric Polynomials	105-106
	Timan, A. F. (Dnepropetrovsk). On Some Problems of the Constructive Theory of Functions Defined in the Finite Interval of Real Axis Section.	106
	Mention is made of Nikol'skiy, S. M. and Chebyshev, P. L.	106
	Trokhimchuk, Yu. Yu. (Novosibirsk). On N. N. Luzin Problems in the Theory of Functions of a Complex Variable.	106
	Tumarkin, G. Ts. (Moscow). On Certain Boundary Properties of Analytic Function Sequences. Card 33/80	106-107

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755710007-8"





GOPENGAUZ, I.Ye: TIMAN, A.F.

The modulus of continuity of periodic functions with a given modulus of smoothness. Usp.mat.nauk 12 no.3:291-294 My-Je '57. (MIRA 10:10) (Functions, Periodic)

TIMAN, H.+ 38-4-9/10 TIMAN, A.F. AUTHOR: Addition to A.V. Yefimov's Paper "Estimation of the Modulus of TITLE: Continuity of the Functions of Class H' " (Dobavleniye k rabote A.V. Yefimova "Otsenka modulya nepřeryvnosti funktsii klassa H' ").. Izvestiya Akad.Nauk, Ser.Mat., 1957, Vol. 21, Nr 4, pp. 595-598 (USSR) PERIODICAL: Theorem: If the function f(x) defined on the whole real axis satisfies for arbitrary x_1 and x_2 the condition ABSTRACT: $|f(x_1) - 2f(\frac{x_1 + x_2}{2}) + f(x_2)| \le |x_1 - x_2|$ then for arbitrary h>0 there holds the inequality $\omega_{x}(f;h) = \sup_{|t| \leq h} |f(x)-f(x+t)| \leq \frac{1}{\ln(\sqrt{2}+1)} h |\ln h| +$ + C[1+|f(1)-f(0)|(1+|x|) + |x ln |x|] h, where C is an absolute constant. Here the coefficient can be decreased neither for $h\rightarrow 0$ nor for $h\rightarrow \infty$. $ln(\sqrt{2+1})$ On $(-\infty,+\infty)$ there exists a function f(x) for which this inequality for $h\rightarrow 0$ and $h\rightarrow \infty$ transforms into an asymp-CARD 1/2

Addition to A.V. Yefimov's Paper "Estimation of the Modulus 38-4-9/10 of Continuity of the Functions of Class H'2"

totic equation. Theorem: If the function f(x) defined on $[a,\infty]$ satisfies the condition (1) for arbitrary x_1 and x_2 , then for arbitrary h>0 there holds the inequality

with the absolute constant C. The coefficient $\frac{1}{\ln 2}$ cannot be decreased for $h \rightarrow 0$ and $h \rightarrow \infty$ too. On [a, ∞] there exists a function f(x) for which for $x \geqslant a$, $h \rightarrow \infty$ and $h \rightarrow \infty$ to an asymptotic

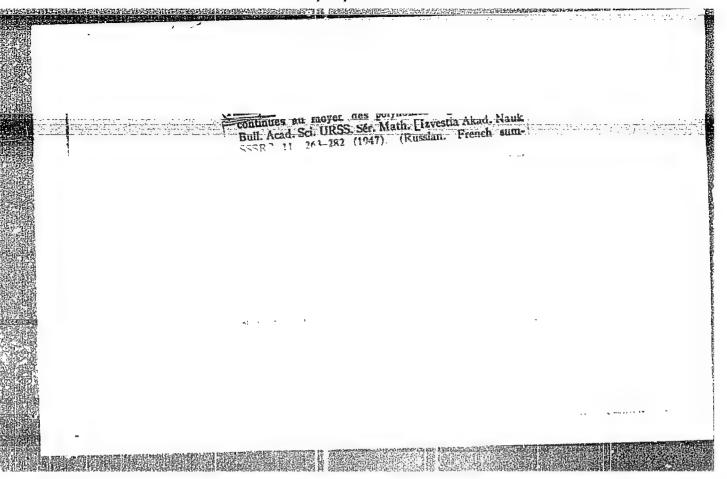
PRESENTED: By M.A. Lavrent'yev, Academician

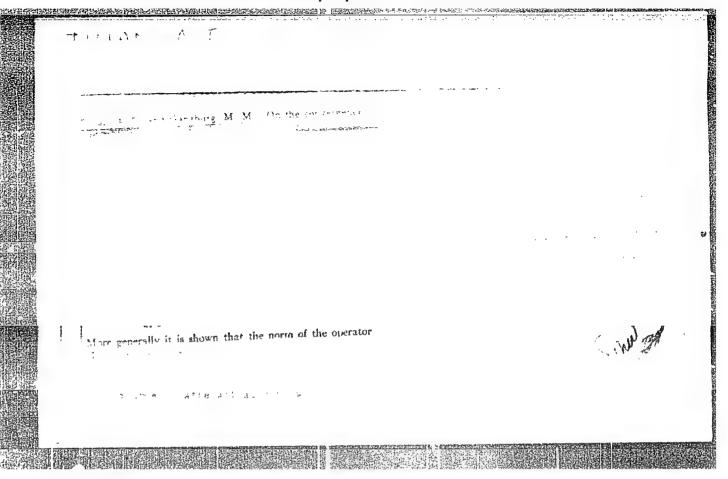
SUBMITTED: October 15, 1956

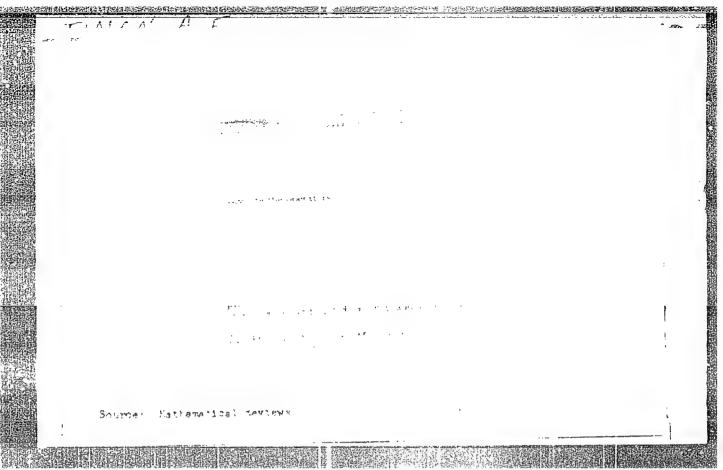
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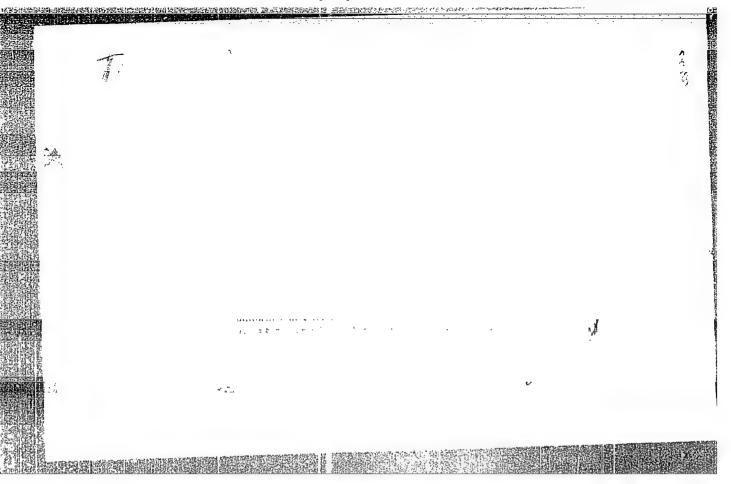
equation.

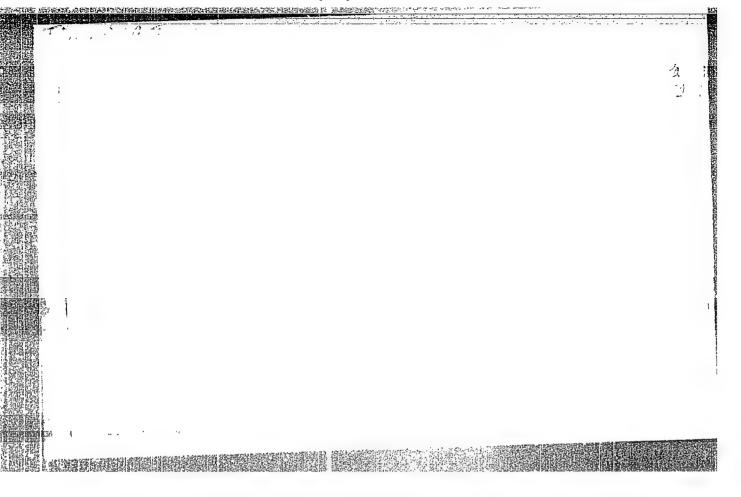
CARD 2/2

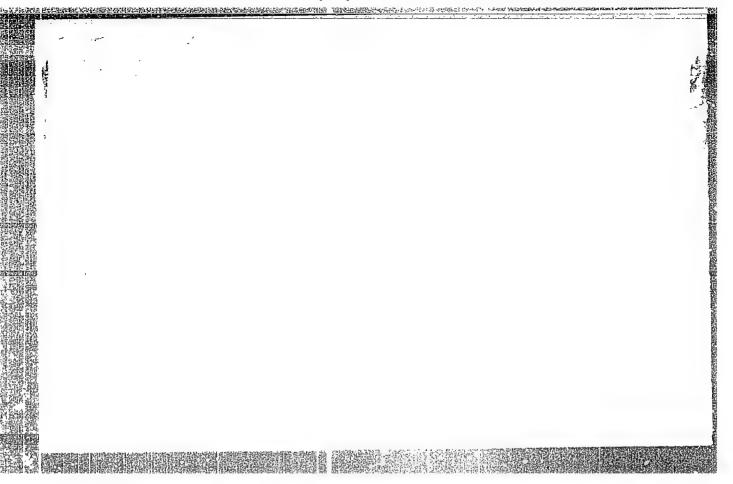


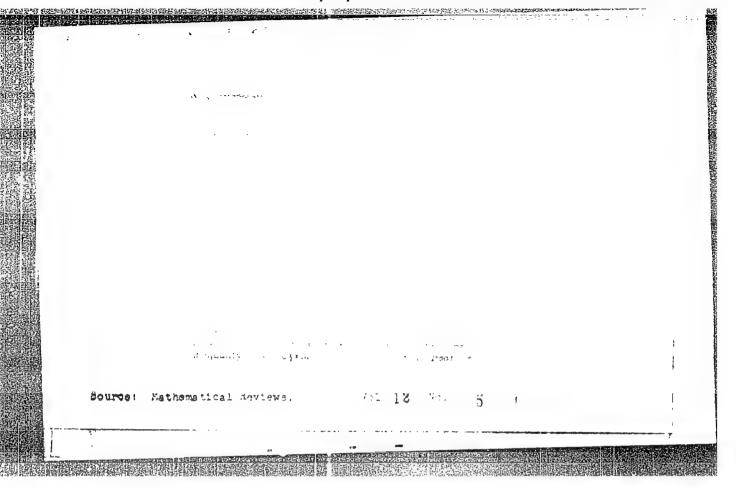


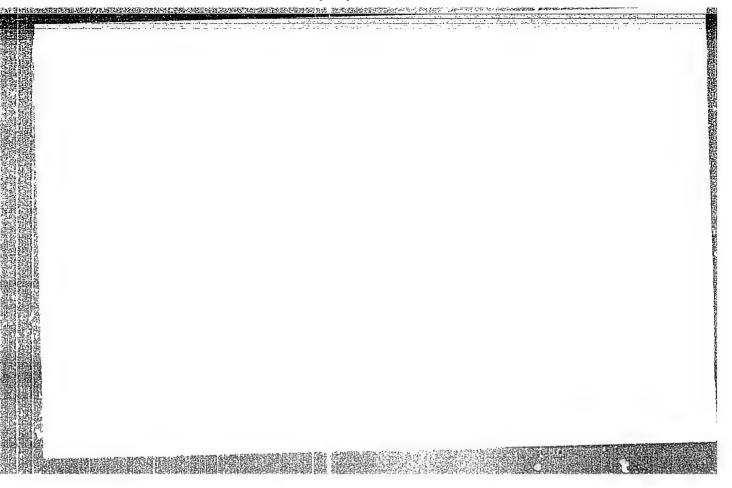


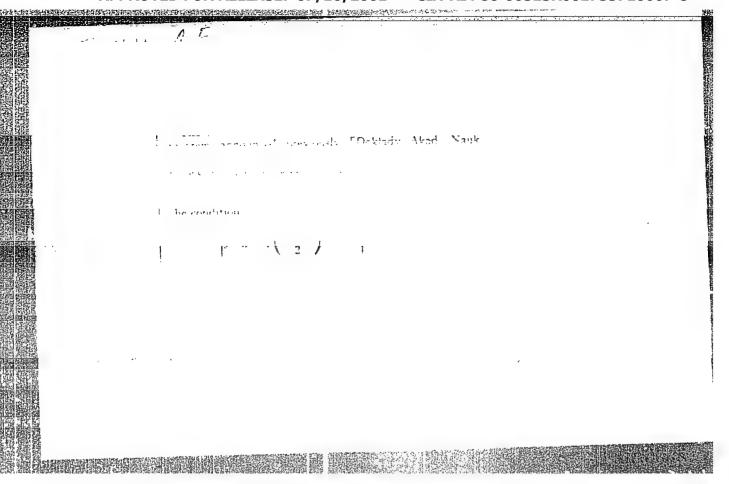


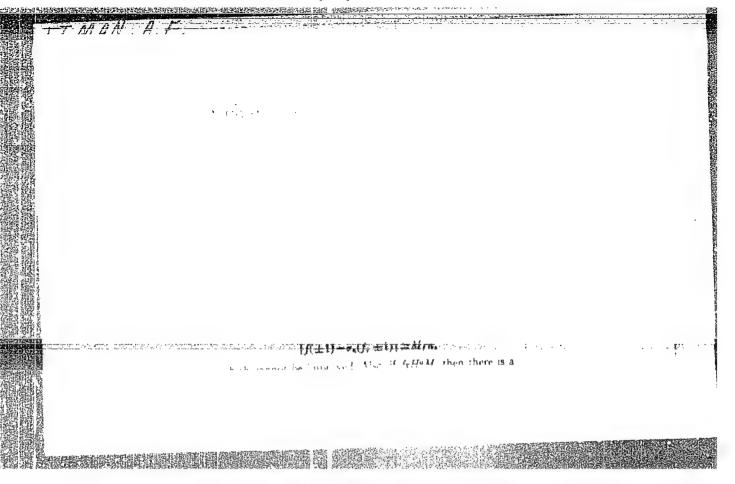


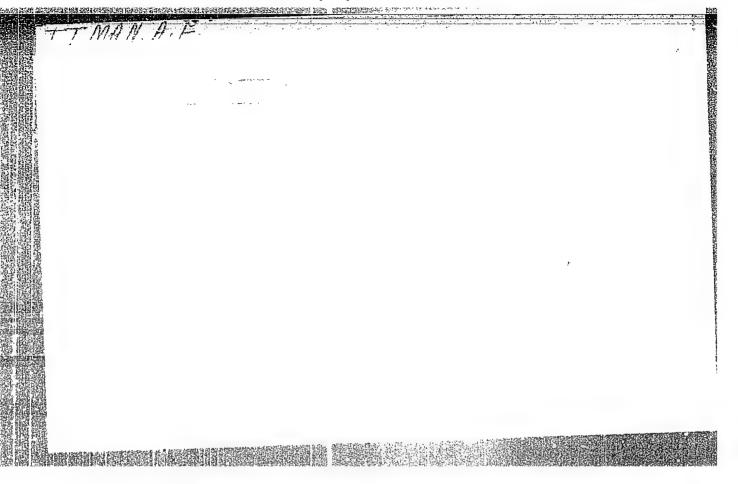


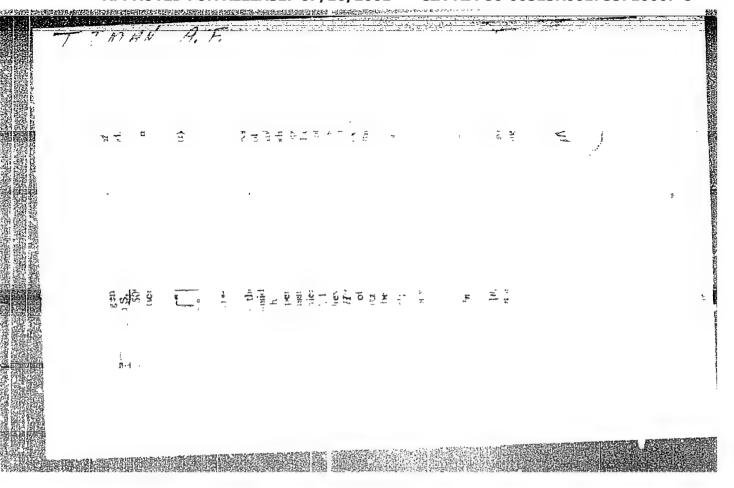












Approximations, Fourier 21 Jun 22 Series Approximating the Periodic Functic Polynomials," A. F. Timan vol IXXXIV, No 6, pp 1147-1150 Prix of numbers determines a cerof approximation for deriving, with each integrable function quence of trigonometrical polynemost important problems in example function for prox properties of methods of prox properties of methods of prox properties of methods of 223785 Pence: D. Jackson, "The Theory Submitted mogorov 23 Apr 52.	USSR/Mathematice - Approximations, Fourier 21 Jun's Series "Linear Methods of Approximating the Periodic Functions by Trigonometric Polynomials," A. F. Timan tions by Trigonometric Polynomials," A. F. Timan tions by Trigonometric Polynomials," A. F. Timan than linear method of approximation for deriving, tain linear method of approximation for deriving, tain linear method of approximation for deriving, the period 2\pi, a sequence of trigonometrical polynomials. One of the most important problems in the theory of approximation is the problems in the theory of approximation is the problems of avestigating the approx properties of methods of vestigating the approx properties of methods of Approximation," New York, 1930.) Submitted by Acad A. M. Kolmogorov 23 Apr 52.
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TIMAN A.F.

Mathematical Reviews Vol. 14 No. 9 October 1953 Analysis 1/2

Timan, A. F. Approximation properties of linear methods SSR. Ser. Mat. 17, 99-134 (1953) (Russian)

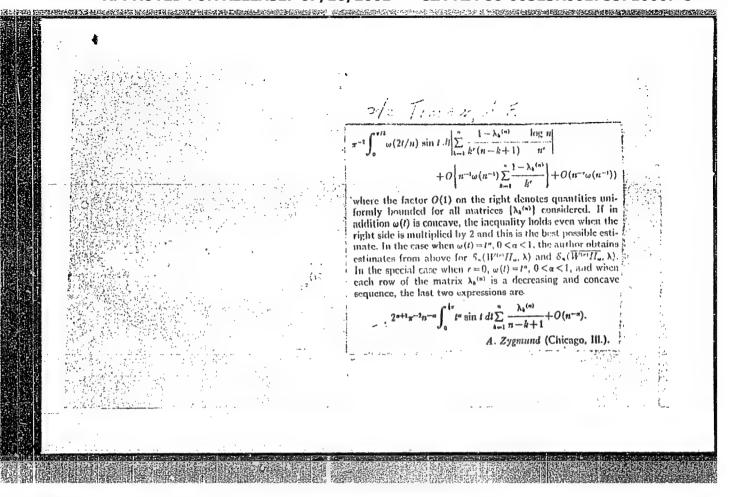
$$U_n(f; x; \lambda) = \frac{a_0}{2} \sum_{k=1}^n \lambda_k^{(n)} (a_k \cos kx + b_k \sin kx),$$

and for a class $\mathfrak M$ of functions f introduce the expression

$$\mathcal{E}_n(\mathfrak{M},\lambda) = \sup_{x,\,f \in \mathfrak{M}} |f(x) - U_n(f;x;\lambda)|.$$

It is a well-known fact that the rapidity with which $\lambda_c^{(n)}$ tends to 1 for $k\to\infty$ and each n is reflected in the rapidity with which \mathcal{E}_n tends to 0 as $n\to\infty$. The author investigates this connection when \mathfrak{M} is the class $W^{(n)}H_{\omega}$ of functions having an rth derivative whose modulus of continuity does not exceed the given function $\omega(\delta)$, and class $W^{(n)}H_{\omega}$ of functions conjugate to the functions in $W^{(n)}H_{\omega}$. He shows that both $\mathcal{E}_n(W^{(n)}H_{\omega})$ and $\mathcal{E}_n(W^{(n)}H_{\omega})$ are not less than

(OVER)



TITAMIL IT I

Mathematical Reviews Vol. 14 No. 10 Nov. 1953 Analysis

1-13-54

Timan, A. F. On interference phenomena in the behaver of entire functions of finite degree. Doklady Akad Nauk SSSR (N.S.) 89, 17-20 (1953). (Russian)

Let $B_{\sigma}^{(o)}$ denote the class of entire functions which are of exponential type σ and $o(|x|^{\sigma})$ on the real axis, with $|f(k\pi/\sigma)|$ bounded; B_{σ} is the subclass whose members are bounded on the real axis. S. Bernstein [Pavestiya Akad. Nauk SSSR. Ser. Mat. 12, 421-444 (1918); these Rev. 10, 363] established the "interference theorem" that if f(z) belongs to $B_{\sigma}^{(0)}$, then $f(z+\frac{1}{2}\pi/\sigma)+f(z-\frac{1}{2}\pi/\sigma)$ belongs to $B_{\sigma}^{(0)}$, (with an explicit bound). The author generalizes this by obtaining a condition on the function $\rho(x)$, of bounded variation, satisfying $\int_{-\infty}^{\infty} e^{r|x|} |d\rho(x)| < \infty$ (some $\tau > \sigma$), which is necessary and sufficient for the function $\int_{-\infty}^{\infty} f(z+t) d\rho(t)$ to belong to B_{σ} when f(z) belongs to $B_{\sigma}^{(0)}$. The condition is that for $k=0,1,\cdots,[g-2]$, the integrals $\int_{-\infty}^{\infty} t^{k} (\sin x \cos x) dt dx$ should be zero. [Since a function of $B_{\sigma}^{(0)}$, q>1, is necessarily of the form $g(z)+P(z)\sin\sigma z$, with g in $B_{\sigma}^{(0)}$ and P a polynomial, the case q>1 is readily deduced from the case q=1.] In particular, $f(z+\lambda)+f(z-\lambda)$ has the property in question (q=1) only when $\lambda=\frac{1}{2}m\pi/\sigma$; the author determines the asymptotic behavior (as $m\to\infty$) of the bound in this case R. P. Boas, Jr. (Evanston, 116).

THAN, A. F.

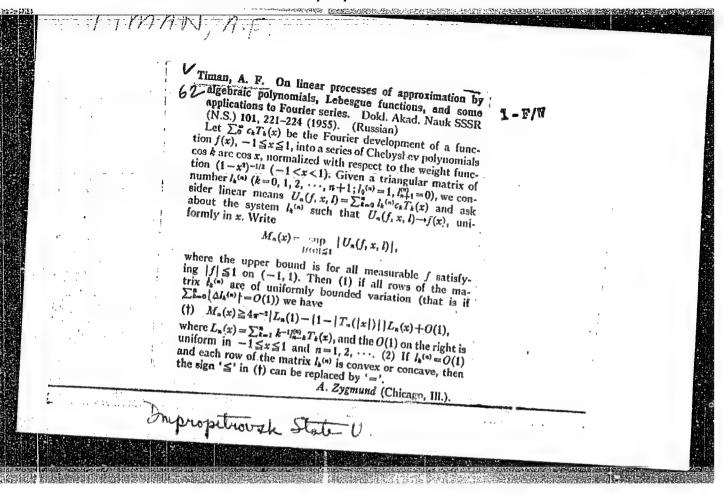
USSR/Nathematics - Approximation

"Approximation of Functions with Given Loculus of Continuity by Chebyshev Jurs," I. M. Ganzburg, Dnepropetrovsk State Univ

DAN SSSR, Vol 91, No 6, pp 1253-1256

States that it is of considerable interest to det the asymptotic behavior of the upper bound of the deviations of functions F(x) from their Chebyshev sum $S_n(f, x)$ as extended to the class H_w of given functions f(x) (-]<x<1) for which the inequality f(x')-f(x'')/=w(x'-x'')/y holds; here w(t) is a convex-upward function representing the modulus of continuity. That is, the author considers the asymptotic evaluation of the quantity $E_n(H_w,x)=\sup_{f(x)}f(x)-s_n(f,x)$ for f in H_w and for any Lipschitz condition -a (O<a \leq 1). Demonstrates a theorem that gives for each x in the interval (-1,1) the asymptotic behavior of E_n uniformally in (-1,1). Notes that this problem was solved by S. E. Sikol'skiy (Iz AN SSSR, Ser Fatem. 10, 295, 1946) for Lipschitz condition -1 and by A. F. Then (DAN 77, No 6, 969, 1951) for Lipschitz condition -a (O<a<1). Acknowledges solvice of Professors S. E. Nikol'skiy and E. Then. Presented by Acad E. N. Kolmogorov 27 June 53.

275T75



TIMAN , A. F.

SUBJECT AUTHOR

USSR/MATHEMATICS/Fourier series

CARD 1/2

TITLE

POGODICEVA N.A., TIMAN A.F.
On a relation in the theory of summation of the interpolation polynomials and the Fourier series. PERIODICAL

Doklady Akad. Nauk 111, 542-543 (1956)

reviewed 3/1957

Let C be the class of all 2π -periodic functions f(x), let $S_n(f_ix)$ =

 $= \frac{a_0}{2} + \sum_{k=1}^{n} a_k \cos k x + b_k \sin k x \text{ be the n-th partial sum of the Fourier series}$ for f(x) and $\tilde{S}_n^{(n)}(f,x) = \frac{a_0^{(n)}}{2} + \sum_{k=1}^{n} (a_k^{(n)} \cos k x + b_k^{(n)} \sin k x)$ a trogonometric

polynomial of n-th order which interpolates f(x) in the system of knots

 $x_{y}^{(n)} = \frac{2 \sqrt{\pi}}{2n+1}$ (y = 0, 1, 2, ..., 2n). Every triangular matrix of the numbers $\lambda_{k}^{(n)}$ ($k = 0, 1, 2, ..., n+1; \lambda_{0}^{(n)} = 1; \lambda_{n+1}^{(n)} = 0$) determines two interpolation processes:

(1)
$$u_n(f_{\sharp x; \lambda}) = \frac{a_0}{2} + \sum_{k=1}^{n} \lambda_k^{(n)} (a_k \cos k x + b_k \sin k x)$$
and

and $\widetilde{u}_{n}(f_{i}x_{i}\lambda) = \frac{a_{0}^{(n)}}{2} + \sum_{k=1}^{n} \lambda_{k}^{(n)} (a_{k}^{(n)} \cos k x + b_{k}^{(n)} \sin k x).$

"APPROVED FOR RELEASE: 07/16/2001

Doklady Akad. Nauk 111, 542-543 (1956)

CARD 2/2 PG - 630

As is well-known there holds the inequation

$$\underset{\mathbf{x}}{\mathbb{A}} \sup_{\mathbf{x}} L_{\mathbf{n}}(\mathbf{x}) \leq L_{\mathbf{n}} \leq \mathbb{B} \sup_{\mathbf{x}} L_{\mathbf{n}}(\mathbf{x}),$$

where B and A are certain positive constants being independent of $\lambda_k^{(n)}$ and (3) $L_n = \sup_{|f(x)| \le 1} |u_n(f;x;\lambda)|$; $L_n(x) = \sup_{|f(x)| \le 1} |\widetilde{u}_n(f,x,\lambda)|$.

This inequation is precised by the authors in the following manner: Theorem: If $|\lambda_k^{(n)}| \leq M$ and for every fixed n the values $\lambda_k^{(n)}$ (k=0,1,...,n+1; $\lambda_0^{(n)} = 1, \lambda_{n+1}^{(n)} = 0$) form a convex or concave system of numbers, then for $n \longrightarrow \infty$ there always holds the relation

$$L_n(x) = \frac{\pi}{2} | \sin \frac{2n+1}{2} x | L_n + O(1),$$

where O(1) is uniformly bounded with respect to x and n by a constant depending only on M.

INSTITUTION: University, Dnjepropetrovsk.

ILMAN Á٠٢.

SUBJECT AUTHOR

USSR/MATHEMATICS/Theory of approximations CARD 1/1 PG-638

TIMAN A.F., TUČINSKI L.I.

TITLE

Approximation by aid of algebraic polynomials, of differentiable

functions which are given on a finite interval.

Doklady Akad. Nauk 111, 771-772 (1956) PERIODICAL

reviewed 3/1957

Let the functions f(x) be defined on [-1,+1] and possess there the r-th derivative f(r)(x) $(r \ge 0)$ which satisfies the Lipschitz condition

$$\begin{aligned} & \left| \mathbf{f^{(r)}}(\mathbf{x}_1) - \mathbf{f^{(r)}}(\mathbf{x}_2) \right| \leq \mathbf{M} \left| \mathbf{x}_1 - \mathbf{x}_2 \right|^{c_k} & (0 \leq k < 1). \text{ Let } \hat{\mathbf{T}}_0(\mathbf{x}) = \sqrt{\frac{1}{\pi}}, \hat{\mathbf{T}}_k(\mathbf{x}) = \sqrt{\frac{2}{\pi}} \cos k \underset{\text{cos } \mathbf{x}}{\text{arc.}} \\ & \mathbf{k} = 1, 2, \dots \text{ and } c_k = \int_{-1}^{+1} \frac{\mathbf{f}(\mathbf{t}) \hat{\mathbf{T}}_k(\mathbf{t})}{\sqrt{1 - \mathbf{t}^2}} & \text{dt. Let } \mathbf{S}_n(\mathbf{f}, \mathbf{x}) = \sum_{k=0}^{n} c_k \hat{\mathbf{T}}_k(\mathbf{x}) \text{ be the partial} \end{aligned}$$

sum of the corresponding Fourier-Cebyšev series. The authors prove the following theorem: For $n \rightarrow \infty$ uniformly with respect to all $x \in [-1,+1]$ the asymptotic equation

$$\sup_{\substack{\text{over}\\\text{all }f}} \left| f(x) - S_n(f, x) \right| = \frac{2^{\alpha + 1} M}{\pi^2} \frac{\ln n}{n^{r+\alpha}} \left(\sqrt{1 - x^2} \right)^{r+\alpha} \int_0^{\frac{\pi}{2}} t^{\alpha} \sin t \, dt + O\left(\frac{1}{n^{r+\alpha}} \right) \quad (r + \alpha > 0)$$

is valid.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755710007-8"

TIMAN, A.F.

SUBJECT

USSR/MATHEMATICS/Topology

CARD 1/1 PG - 676

AUTHOR

TIMAN A.F.

TITLE PERIODICAL

Generalization of a theorem of Stone. Doklady Akad. Nauk 111, 955-958 (1956)

reviewed 4/1957

Let G be a regular topological space, f(x) a function defined on G. Let $G_{a}(f)$ and $G^{a}(f)$ be the subspaces of G, for which $f(x) \ge a$ and $f(x) \le a$ respectively. Let further a = $a_0(f) \leq \infty$ be the lower bound of all numbers a for which $G_a(f)$ is bicompact.

Then the following generalization of the theorem of Stone (Trans.Amer.Math. Soc. 41, 375 (1937)) is valid: Let G be a regular topological space and on it let G be the totality of all bounded and continuous real functions f(x)with the property that for every real number a (with at most one exception)

one of the subspaces $G_a(f)$, $G^a(f)$ is bicompact. Let D be a subset of ${\mathfrak M}$ which with respect to the usual addition and multiplication of functions forms an algebraic ring which contains all constants. If to each two points $x_1 \neq x_2$ in D there exists a function f(x), where $f(x_1) \neq f(x_2) \neq a_0(f)$, then in the sense of the uniform convergence on G_{j} D is everywhere dense in \mathcal{M}_{ullet}

INSTITUTION: University, Dnjepropetrovsk.

SUBJECT USSR/MATHEMATICS/Fourier series CARD 1/2 PG - 831

AUTHOR TIMAN A.F.

TITLE Some remarks on trigonometric polynomials and Fourier-Stieltje's

series.

PERIODICAL Uspechi mat. Nauk 12, 2, 175-183 (1957)

reviewed 6/1957

A paper of Steckin (Uspechi mat. Nauk 10, 1, 159-165 (1955)) induces the author to publish some completing and improving results. Theorem: For every trigonometric polynomial

Theorem: For every trigonometric polynomial
$$(1) K_n(t) = \frac{a_0}{2} + \sum_{k=1}^{n} a_k \cos kt, a_k \text{ arbitrary complex,}$$

it holds the exact inequation

(2)
$$\int_{0}^{\pi} |K_{n}(t)| dt \ge \frac{2}{\pi} \left| \sum_{v=0}^{\infty} \frac{1}{2v+1} \sum_{k=(2n+1)v}^{(2n+1)(v+1)-1} \frac{a_{\lfloor (2n+1)v+n-k \rfloor}}{k+\frac{1}{2}} \right|.$$

For every n=0,1,2,... there exists a polynomial for which the inequation changes to an equation.

Uspechi mat. Nauk 12, 2, 175-183 (1957)

CARD 2/2

PG - 831

Theorem: For every polynomial (1) it holds the inequation

$$\int_{0}^{\pi} |K_{n}(t)| dt \geqslant \frac{2}{\pi} \left| \sum_{v=0}^{\infty} \frac{1}{2v+1} + \sum_{k=m+1}^{(v+1)m-1} \frac{a_{\lfloor (2+1)m-2k \rfloor}}{k} \right|,$$

where $m = 2\left[\frac{n+2}{2}\right]$ or $m = 2\left[\frac{n+1}{2}\right]+1$ and the constant $\frac{2}{\pi}$ cannot be improved for all $n=0,1,2,\ldots$ for $\sum_{k=0}^{+\infty} c_k e^{ikx}$, $c_k = \frac{1}{2}\left(a_k - ib_k\right)$ and

$$\frac{1}{2} a_0 \lambda_0 + \sum_{k=1}^{\infty} \lambda_k (a_k \cos kx + b_k \sin kx)$$

are Fourier series of arbitrary bounded measurable functions (or continuous functions, or integrable functions), then the series $\sum_{k=1}^{\infty} \frac{\lambda_{|k-n|}^{-\lambda}_{k+n}}{k}$ converges uniformly with respect to n=0,1,2,3,....

TIMIAN, A.F. 20-5-13. TIMAN A.F. TIMAN M.F. AUTHOR On the Dependences Between the Moduli of Smoothness of the Func-TITLE tions Assumed On the Entire Real Axis. (O zavisimosti mezhdu modulyamı gladkosti funktsiy, zadannykh na vsey veshchestvennoy osi, -Russian) Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 5, pp 995-997 (U.S.S.R.) PERTODICAL Reviewed 7/1957 Received 6/1957 Be it that $1 \le p \le \infty$ and f(x) is an arbitrarily assumed function in ABSTRACT the interval (=4, <1), for which $||f||_{L_p} = (|f(x)|pdx)^{1/p} < \infty$ applies. The authors investigate the function $w_k(f,t)L_p = \sup_{|h| \ge t} \int_{\sqrt{t}=0}^{k}$ $\binom{k}{v}f(x+vh)$ $\binom{p}{dx}^{1/p}$, for any natural $k \ge 1$, which is defined upon the semiaxis t > 0 and within the corresponding metric represented the modulus of smoothness of the order k for f(x). At k < v, $w_{\star}(f;t)_{Lp} \le 2^{V-k}w_{k}(f;t)_{Lp}$ AFPLIES! EXAmples of functions may be given for which this inequation (which evaluate; the modula of smoothness in an upward direction by the moduli of smoothness of lower order) is changed into an equation with respect to the order (about t > 0). The authors next give a theorem by which the order of the moduli of smoothness of the function may be evaluated in an upward direction by their moduli of smoothness of higher orders. Theorem: In the case $1 \le k \le v$ at $0 \le t \le 1/2$, Card 1/2

On the Dependences Between the Moduli of Smoothness of the Functions Assumed On the Entire Real Axis, 20-5-13/57

$$\mathbf{w_k(f;t)_{L_p}} \leqslant \mathbf{c_{v_ok}} \mathbf{t^k} \int_{\mathbf{t}}^{1} \int_{\mathbf{t_1}}^{2} \cdots \int_{\mathbf{t_{w_ok}} = 1}^{\mathbf{y-k}} (\mathbf{w_v(f;t_{v-k})_{L_p}} / \mathbf{t_{v-k}^v}) d\mathbf{t_1} \cdots d\mathbf{t_{v-k}} \text{ applies.}$$

Here $C_{\bm{v}_3k}$ is a constant which does not depend upon the function f. The following inequation always applies at $k\!\!\geqslant\!\!1$

$$w_k(f;t)_{L_p} \leq c_k t^k \int_{t}^{t} (w_{k+1}(f;u)_{L_p}/u^{k+1}) du$$
 two corollaries resulting

from this theorem are given. In conclusion two lemmata are written down, which may by used as a proof of the theorem. (No ill ...)

ASSOCIATION

State University Dnepropetrovsk

PRESENTED BY

KOLMOGOROV A.N., Member of the Academy

24.9.1956 SUBMITTED

AVAILABLE

Library of Congress

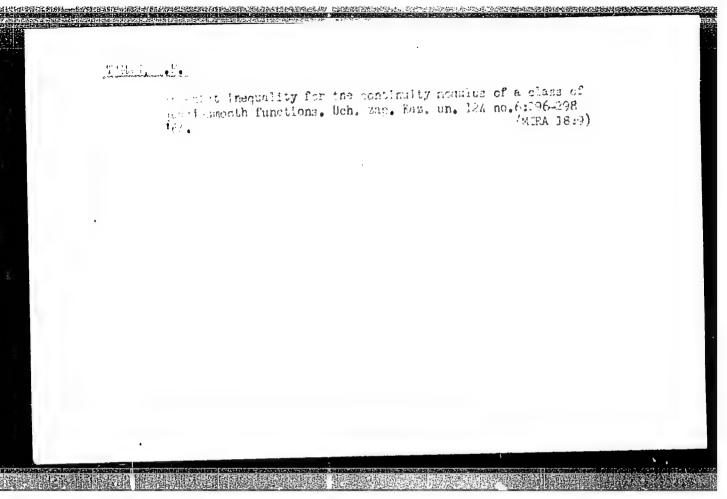
Card 2/2

TIMAN, A.F. [Timen, O.F.]

Mutual deviation of classes of real functions, defined on arbitrary

compacts, with given majorants of the continuity modulus. Rop. AN URSR no.11:1416-1418 '63. (MIRA 17:12)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.



ACC NR: AF5028170 AUTHOR: Timan, A. F. ORG: none TITLE: Deformation of metric spaces and certain questions in function theory connected therewith SOURCE: Uspekhi matematicheskikh nauk, v. 20, no. 2, 1965, 53-87 TOPIC TAGS: function theory, mathematic space, topology, mathematic physics, class theory, thermodynamics Abstract: A number of extremum problems in function theory are variant formulations of a single common question relating to the variant formulations of a single common question relating to the theory of metric spaces. The basic concept underlying the formulation of the question is deformation of a metric space (i. e., change to some other metric). When the properties of functions studied over a space are determined by its metric, deformation of the metric space results in a change of such classes of functions as are characterized by these properties. This article is devoted to one such typical problem and contains a detailed exposition of to one such typical problem and contains a detailed exposition of the fundamental result as well as certain concrete examples of its	Chappendon common de describe de la common del common de la common del la common de la common del la common de la common del la common del la common de la common de la common del la common
as are characterized by these proportions a detailed exposition of to one such typical problem and contains a detailed exposition of the fundamental result as well as certain concrete examples of its application to various problems of analysis. The article states application to various problems of analysis. The article states the problem as follows: Let Q be an arbitrary, regular topological topological.	
Card 1/5	

L 3961-66

ACC NR: AP5028170

space with a countable base and M(Q), a Banach space of all real functions f(x) defined in points x(-Q), for which $\|f\| = \sup_{x \in Q} |f(x)| < \infty$.

According to Urysohn's theorem the space Q is metrizable and the possible metrization of Q which preserves the topology of the space is not unique. The corresponding metric space generated by the introduction of a certain metric g(x, y) in Q is designated g(y), and the class of functions f(x) in g(y) which satisfy Hölder's condition

 $|f(x)-f(y)| \leq \varrho(x,y) \tag{1}$

for any pair of points x and y in Q is designated $H(Q_Q)$. The transition in Q from the given metric Q(x,y) to any other metric P(x,y), resulting in a new topology in Q, involves a change in the class, here considered, of functions f(x)(-M(Q)) which satisfy condition (1). Arising in connection with this is the question of the metric characteristic of such a change — a problem which is connected with the study of the value of the reciprocal deviation of the classes $H(Q_P)$ and $H(Q_Q)$, corresponding to two different metrics in Q: 1. e., the value

 $E_{H(Q)_{\mathfrak{p}}}\{H(Q_{\mathfrak{p}})\} = \sup_{f \in H(Q_{\mathfrak{p}})} \inf_{g \in H(Q_{\mathfrak{p}})} \|f - g\|. \tag{2}$

card 2/5

L 3961-66

ACC NR: AP5028170

An example of the foregoing is the physics problem of the deformation of a body in a given temperature state with a limited heat flow, involving the selection of another temperature state which does not increase the maximum heat flow but in which the maximum temperature change will be a minimum at corresponding points. A determination is made of the maximum value of the corresponding optimum change in the temperature of the body.

Section 1 formulates the following fundamental theorem: For any two metrics r(x, y) and e(x, y), defined in a regular topological space Q with a countable base and preserving its topology, the equality

 $E_{H(Q_p)}\{H(Q_r)\} = \frac{1}{2} \sup_{x, y \in Q} \{r(x, y) - \varrho(x, y)\},$ (3)

in which the right-hand side may be both finite and infinite holds true.

In Section 2 the fundamental theorem is initially established for the case in which the space Q consists of a finite number of elements. Since in this case $H(Q_{\rho})$ and $H(Q_{r})$ are certain polyhedrons of a finite-dimensional real space, the left-hand side of (3); representing the value of their deviation, can be calculated as the maximum of the distances between corresponding parallel bounds. Of fundamental importance here is the role played by the Cord $\frac{2}{5}$

是是他们是不是是不是,他们们就是此时,但不得为什么的的。他们就是他们的是是他们的是是那么是我们的我们就是我们的我们就是我们是我们的我们就是我们的人,我们就是我们

L 3961-66

ACC NR. AP5028170

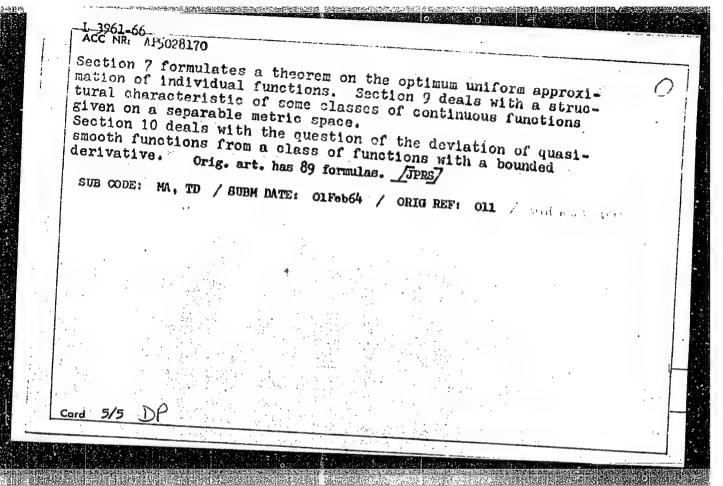
triangular property of each of the metrics. This property, as well as the result obtained in Section 2, is used in Section 4, in which the fundamental theorem is proved and generalized. The proof indicates that the scope of the theorem's applicability is really somewhat wider than is indicated in the formulation. It

is shown in particular that equality (3) also remains valid for quasi-metrics: i. e., for metrics satisfying only the conditions $\mathcal{C}(x, x) = 0$ and $\mathcal{C}(x, y) \leq \mathcal{C}(x, z) + \mathcal{C}(y, z)$ (for metric spaces which may have "wrinkles"). This circumstance makes it possible to obtain equality (3) for the upper bound of (2) as well as the value of the optimum uniform approximation

 $\inf_{g \in H(Q_p)} \|f - g\|$

of any individual real function f(x), continuous on Q; it is also important in the solution of a number of problems of the type here under consideration.

Section 5 presents a general theorem on the reciprocal deviation of classes, defined on an arbitrary compactum, of real continuous functions with given majorants of the modulus of continuity. Section 6 considers the application of the fundamental superpositions.



TIMAN, A.F.

Deformation of metric spaces and some associated problems in the theory of functions. Usp. mat. nauk 20 no.2:53-87 Mr-Ap '65.

(MIRA 18:5)

A problem in approximation theory bearing on the superposition of functions. Dokl. AN SSSR 154 no.2:274.275

Ja'64. (MIRA 17:2)

1. Dnepropetrovskiy khimiko. tekhnologicheskiy institut im.
F.E. Dzerzhinskogo. Predatavleno akademikom S.N. Bernshteynom.

ACCESSION NR: AP4012076

S/0020/64/154/002/0274/0275

AUTHOR: Timan, A. F.

TITLE: One problem of the theory of approximation relating to

superpositions of functions

SOURCE: AN SSSR. Doklady*, v. 154, no. 2, 1964, 274-275

TOPIC TAGS: approximation theory, function superposition, mathematical analysis, mathematical function, Fourier series, Hoelder condition, topology

ABSTRACT: Let G be a regular topological space with a counting base, u = A(x) be a single-valued continuous operator mapping G onto some matric space Q_ρ with a metric $\ell(u,v)$, and let $H(Q_\rho)$ be a class of bounded real functions satisfying the Hölder condition

 $|f(u)-f(v)| < \rho(u,v).$ in Q_p . Every operator u = A(x) brings into agreement all the functions $f \in H(Q_e)$ generated by the superpositions f = A(x) = A

ACCESSION NR: AP4012076

when $A(x) = \lambda(x)$ and $B(x) = \mu(x)$ are continuous functionals defined in G and mapping this space onto the entire complex plane amonto some part of it. Three theorems are proved. The proof of these theorems is associated with a study of a change in the class of functions defined in a separable metric space and satisfying the Holder condition there during transition from a given metric $\rho(x,y)$ to some other metric r(x,y). Orig. art. has: 4 equations.

ASSOCIATION: Dnepropetrovskiy khimiko-tekhnologicheskiy institut im. F.E. Dzerzhinskogo (Dnepropetrovsk Chemical Engineering

SUBMITTED: 30Apr63

SUB CODE: MM

DATE ACQ: 14Feb64

ENCL: 00

NR REF SOV: 003

OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755710007-8"

TIMAN, A.F.

P.S.Uryson's metrization theorem. Dokl. AN SSSR 150 no.1:52-53 My '63. (MIRA 16:6)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut im. Dzerzhinskogo. Predstavleno akademikom A.N.Kolmogorovym. (Topology)

L 16981-63

EWT(d)/FCC(w)/BDS

AFFTC/IJP(C) 5/020/63/149/005/003/018

AUTHOR:

Timan, A. F.

TITLE:

On a constructive principle of duality in the class of continous functions monotonically decreasing to

zero and convex on the half line

Akademiya nauk SSSR. Doklady, v. 149. no. 5, 1963, 1041-1042 PERIODICAL:

TEXT: Let ω (t) be a module of continuity defined for $0 \le t \le \infty$, i.e. a continuus, non-decreasing function, such that ω (0) = 0. For every non-negative value M consider a class MH. of all functions g

satisfying condition

 $|g(x_1)-g(x_2)| \leq M\omega(|x_1-x_2|)$.

Denote by $\mathcal{E}_{\mathcal{M}}^{\mathcal{H}}(f)$ the best uniform approximation of the function f(x)

by g(x), which satisfies (1) i.e. $E_M^a(f) = \inf_{x \in MH_a} \sup_{0 \le x < \infty} |f(x) - g(x)|$.

The author proves the following theorem: For every convex from above and unbounded on $[0,\infty)$ module of continuity ω (t) the class of all continous, monotonically decreasing functions f(x), defined for $0 \le x < \infty$ is identical with the class of their best approximations $E(M) = E_M^m(f)$.

SUBMITTED:

October 29, 1962

Card 1/1

TIMAN, A.F.

A constructive duality principle in a class of continuous functions which decreases monotonically to zero and are convex on the half-axis. Dokl. AN SSSR 149 no.5:1041-1042 Ap 163. (MIRA 16:5)

1. Predstavleno akademikom S.N.Bernshteynom. (Functions, Continuous)

TIMAN, A.F.

A constructive duality principle in a class of continuous functions which decreases monotonically to zero and are convex on the half-axis. Dokl. AN SSSR 149 no.5:1041-1042 Ap 163. (MIRA 16:5)

1. Predstavleno akademikom S.N.Bernshteynom. (Functions, Continuous)

TIMAN, A.F.

A constructive characteristic of certain classes of continuous functions given in a separable metric space.

Dokl. AN SSSR 150 no.2:266-267 57 163. (MIRA 16:5)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut im. F.E.Dzerzhinskogo. Predstavleno akademikom S.N.Bernshteynom. (Functions, Continuous) (Topology)

TIMAN, A. F.

"On some new questions in the theory of approximation of functions of a real variable"

report submitted at the Intl Conf of Mathematics, Stockholm, Sweden, 15-22 Aug 62

TIMAN, A.F.

以外的方式,不可以企业的过去式和过去分词的对话的对话的对话,但可以可以可以

One peometrical problem in the theory of approximations. Dokl. AN SSSR 140 no.2:307-310 S '61. (MIRA 14:9)

1. Dnepropetrovskiy bosudarstvennyy universitet im. 300-letiya vossoyedineniya Ukrainy s Rossiyey. Predstavleno akademikom A.N. Kolmogorovym.

(Approximate computation)

VLASOV, V.F.; TIMAN, A.F.

Relation for integrals of moduli of trigonometric polynomials. Dokl. AN SSSR 138 no.6:1263-1265 Je '61' (MIRA 14:6)

1. Predstavleno akademikom S.N.Bernshteynom. (Polynomials) (Integrals)

28661 S/020/61/140/002/006/023 C111/C444

AUTHOR: Timen, A. F.

TITLE: On a geometric problem in the theory of approximation

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 2, 1961, 307-310

TEXT: Let R be a metric space, G an arbitrary set in R, F a bounded set,

 $\mathcal{E}_{G}(F) = \sup_{f \in F} \inf_{g \in G} g(f,g)$ (1)

 $^{\text{H}}\omega$ denotes the set of all real continuous functions f(t), satisfying the condition $|f(t)-f(\mathcal{T})|\leq\omega\left(|t-\mathcal{T}|\right)$ for arbitrary t and \mathcal{T} on $\left[\text{a,b}\right]$, where $\omega(n)$ is the modulus of continuity.

Theorem 1: For arbitrary continuity moduli $\omega_1(u)$ and $\omega_2(u)$ is the space C of the continuous functions on [a,b] there always holds

$$\mathcal{E}_{H_{\omega_{2}}}^{C}(H_{\omega_{1}}) = 1/2 \max_{0 \le u \le b-a} \left\{ \omega_{1}(u) - \omega_{2}(u) \right\}$$
 (7)

Card 1/4

28661 \$/020/61/140/002/006/023

On a geometric problem in the theory ... C111/C444

If one considers the space C* of all continuous 2M- periodic functions and the corresponding classes H* and H*, then in C* for arbitrary $\omega_1(\mathbf{u})$ and $\omega_2(\mathbf{u})$ it holds

 $\begin{cases}
\mathbf{e}_{\mathbf{H}^{\bullet}}(\mathbf{H}^{\bullet}) = 1/2 & \max_{0 \leq \mathbf{u} \leq \mathbf{J}} \\
\mathbf{e}_{\mathbf{u}_{2}}(\mathbf{u}) - \mathbf{e}_{2}(\mathbf{u})
\end{cases} \tag{8}$

Theorem 3: Let Z_1 be the class of all functions f(t) given on [-1,1] which satisfy the conditions f(+1) = f(-1) = 0, $|f(t_1) - f(t_2)| \le 1$

 $\left| f(t_1) - 2f\left(\frac{t_1 + t_2}{2}\right) + f(t_2) \right| \leq \left| t_1 - t_2 \right|, \ t_1, t_2 \in [-1, 1]. \ \text{Then in the space C of all continuous functions on } \left[-1, 1 \right] \text{ for } \omega\left(u\right) = \text{mu (m-integer)}$ the following relation holds

 $\mathcal{E}_{\mathbb{H}_{\omega}}^{\mathbf{C}}(\mathbf{z}_{1}) = \frac{1}{2^{m+1}}.$

Card 2/4

\$/020/61/140/002/006/023

On a geometric problem in the theory ... C111/C444

As applications are mentioned:

Theorem 4: For an arbitrary convex continuity modulus $\omega(u)$ it holds

 $f \in \mathbb{H}^* \omega_1 \quad \xrightarrow{\lim_{n \to \infty}} \frac{\mathbb{E}_{n-1}^*(f)}{\omega_1 \left(\frac{\pi}{n} \right)} = \frac{1}{2}$

where

there
$$E_{n-1}^{*}(f) = \inf_{a_{k}, b_{k}} \max_{t} \left| f(t) - \sum_{k=0}^{n-1} (a_{k} \cos kt + b_{k} \sin kt) \right|.$$

Theorem 5: If $\omega(u)$ is an arbitrary convex continuity modulus and $D_{2n-1}(H_{\omega}^{*})$ the diameter of the order 2n-1 (compare with A. N. Kolmogorov (Ref. 3: Ann. of Math., 37, 107 (1936); V. M. Tikhomirov (Ref.8: DAN, 130, no. 4, 734 (1960) UMN, no. 3 (1960))) for Hand then

$$D_{2n-1}(H_{\omega_1}^{\bullet}) = \frac{1}{2} \omega_1 \left(\frac{\pi}{n}\right)$$
 (12)

Card 3/4

28661 S/020/61/140/002/006/023 C111/0444

On a geometric problem in the theory ... C111/C444

This theorem completes a result of Lorenz (Ref.4: G.G. Lorenz, Bull. Am. Math. Soc, 66, no. 2, 124 (1960)).

The author mentions M. G. Kreyn, N. J. Akhiyezer, P.L. Chebvshev, N.P. Korneychuk, S.M. Nikol'skiy.

The author reported on the contents of this paper at a seminary on function theory at the University of Dnepropetrovsk, on March 28, 1961.

There are 6 Soviet-bloc and 3 non-Soviet-bloc references. The two reference to English language publications read as follows: A.N. Kolmogorov, Ann. of Math., 37, 107 (1936); G. G. Lorenz, Bull. Am. Math. Soc., 66, no. 2, 124 (1960)

ASSOCIATION: Dnepropetrovskiy gosudarstvennyy universitet imeni

300-letiya vossoyedineniya Ukrainy s Rossiyey (Dnepropetrovsk State University imeni 300-Years Reunion of the

Ukraine with Russia)

PRESENTED: April 27, 1961, by A. N. Kolmogorov, Academician

SUBMITTED: April 27, 1961

Card 4/4

TIMAN, A.F.

Simultaneous approximation of functions and their derivatives on the entire numerical axis. Izv.AN SSSR Ser.mat. 24 no.3:421-430 My-Je 160. (MIRA 14:4)

l. Predstavleno akademikom S.N.Bernshteynom.
(Approximate computation)

16.2600

AUTHOR: Timen, M.F.

S/041/60/012/001/006/007 C111/C222

TITLE: Remark on the Question of Transformations of Multiple Sequences

PERIODICAL: Ukrainskiy matematicheskiy zhurnal; 1960, Vol. 12, No. 1, pp 99 - 100

TEXT: Let $W(b_m, c_m)$ be the class of double sequences $\{S_{m,n}\}$ for which (1) $S_{m,n} = O(b_m)$ for every fixed n

(2) $S_{m,n} = O(o_n)$ for every fixed m

(3) $|s_{m,n}| \leq x$ for $m,n \geqslant N$

where $\{b_m\}$, $\{c_n\}$ are positive number sequences, $\lim_{m\to\infty} b_m = \infty$, $\lim_{n\to\infty} c_n = \infty$. If N = 0 then \mathcal{M} is denoted by $\mathcal{M}_{\mathbb{Q}}$. Let

Card 1/5

88298

\$/041/60/012/001/006/007 C111/C222

Remark on the Question of Transformations of Multiple Sequences

(4)
$$\delta_{m,n} = \sum_{k=0}^{\infty} \sum_{l=0}^{\infty} a_{k,l,m,n} s_{k,l}$$

Let $(m,n)_{r,\ell,\mathcal{M}} \to \infty$ mean that m and n, for a fixed $\mu \geqslant 1$, tending to infinity satisfy

infinity satisfy

(12) $\frac{n^{T}}{\mu} \leq m \leq \mu n^{\frac{2}{3}} \quad (r \leq g) \quad .$ Theorem 1: If the system of numbers $\left\{a_{k,1,m,n}\right\}$ for arbitrary fixed $\lambda \geqslant 1$,

 $\lim_{k,1,m,n} a_{k,1,m,n} = 0 \text{ for arbitrary fixed } k,l$ $(m,n)_{r, \frac{\alpha}{2}, \mu} \to \infty$ (5)

 $\sum_{\substack{1\\ \lambda} 1^{r} < k < \lambda 1^{g}} |a_{k,1,m,n}| \le M \text{ uniformly in m,n which satisfy (12)}$ (6)

88298

 $\frac{\text{S/041/60/012/001/006/007}}{\text{C111/C222}}$ Remark on the Question of Transformations of Multiple Sequences

(7)
$$\lim_{\substack{(m,n)\to\infty\\ r,g,\mu}} \sum_{k=0}^{\infty} \sum_{l=0}^{\infty} a_{k,l,m,n} = 1$$

(7)
$$\lim_{\substack{(m,n)\to\infty\\ r,g,\mu}} \sum_{k=0}^{\infty} \sum_{l=0}^{\infty} a_{k,l,m,n} = 1$$
(8)
$$\lim_{\substack{\lambda\to\infty\\ (m,n)_{r,g,\mu}}\to\infty} \sum_{\lambda 1^{\frac{c}{2}} \leq k} |a_{k,l,m,n}| = 0$$
(9)
$$\lim_{\substack{\lambda\to\infty\\ (m,n)_{r,g,\mu}\to\infty}} \sum_{\lambda k \leq 1^{r}} |a_{k,l,m,n}| = 0$$

(9)
$$\lim_{\substack{\lambda \to \infty \\ (m,n)_{r,3,\mu} \to \infty}} \sum_{\substack{\lambda_k \le 1^r}} |a_{k,1,m,n}| = 0$$

then from $s_{m,n} \in \mathcal{M}_o$ and from the fact that for every fixed $\lambda \geqslant 1$ it holds

(10)
$$\lim_{(m,n)_{r,\zeta,\lambda} \to \infty} S_{m,n} = S$$
Card 3/5

S/041/60/012/001/006/007 C111/C222

Remark on the Question of Transformations of Multiple Sequences

it follows that also

(11)
$$\lim_{(m,n)_{r,q,\mu}\to\infty} \widetilde{\sigma}_{m,n} = S$$

is valid. Theorem 2: If the system of numbers $\{a_{k,l,m,n}\}$ for arbitrary fixed $l \ge 1$, $p \ge 1$, beside of (5), (6), (7), (8), (9) still satisfies

(13)
$$\sum_{k=0}^{N} \sum_{l=N+1}^{\infty} |a_{k,l,m,n}|^{c_{l}} \leq \mathbf{M}$$

and

(14)
$$\sum_{k=N+1}^{\infty} \sum_{1=0}^{N} |a_{k,1,m,n}| b_k \leq M$$

Card 4/5

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\$/041/60/012/001/006/007 C111/C222

Remark on the Question of Transformations of Multiple Sequences

for arbitrary fixed N and $\mu \geqslant 1$ which satisfy (12) uniformly in m and n then from $S_{m,n} \in \mathcal{W}(b_m, c_n)$ and (10) there follows the relation (11). There are 4 references: 3 Soviet and 1 American.

[Abstracter's note: There is a misprint in formula (6)].

SUBMITTED: January 28, 1959

Card 5/5

67084 SOV/44-59-1-288 Translation from : Referativnyy zhurnal. Matematika, 1959, Nr 1,p 54 (USSR) 16(1) 16,2600 AUTHOR: Timan, A.F. PERIODICAL: Nauchn.zap. Dnepropetr. un-t, 1956,45,221-224 ABSTRACT: Let Ap denote the class of the functions f(x) which satisfy the following conditions: 1.) f(x) is a real, analytic function on the the following conditions: 1.) f(x) is a real, analytic function on the analytic function on the real axis 2.) there exists a point x_0 and a number p>0 so that for real axis 2.) $|f(2k+1)(x_0)| \le p^{2k} |f'(x_0)|$ 3.) the preceding inequality can become an equality only simultaneously for all every natural k it holds $f^{(2k+1)}(x_0) = (-1)^k p^{2k} f'(x_0).$ k>0, and in this case it is there exists a \$> 0 so Theorem I : For every function $f(x) \in A_p^1$ that for 0 < h < S in the point x_0 the inequality Card 1/3

67084

SOV/44-59-1-288

16(1) On an Inequality

(1)
$$|f'(x_0)| \leq \frac{p}{2 \sin p h} |f(x_0 + h) - f(x_0 - h)|$$

is satisfied. For sufficiently small h it is

(2)
$$\sup |f'(x)| \le \frac{p}{2 \sin p h} \sup_{-\infty < x < \infty} |f(x+h) - f(x-h)|$$
.

The inequalities (1) and (2) generalize the inequalities of S.B.Stechkin (Doklady AN SSSR, 1948,60) on trigonometric polynomials and inequalities of S.M. Nikol'skiy (Doklady AN SSSR, 1948,60) and S.N. Bernshteyn (Doklady AN SSSR, 1948,60; Collected Works, Vol II, article Nr 95) on entire functions of finite degree.

functions of finite degree. Theorem II: If f(x) satisfies the conditions 1.) and 2.), then in the point x for sufficiently small h>0 there holds the inequality

 $|f'(x_0)| \ge \frac{p}{2 \text{ sh p h}} |f(x_0 + h) - f(x_0 - h)|$.

Card 2/3

16(1)

On an Inequality

67084

SOV/44-59-1-288

Besides the mentioned class of functions \mathbb{A}_p^+ the author introduces other classes of functions for which analogous questions are considered.

V.S. Videnskiy

Card 3/3

5

16(1) AUTHORS:

Brudnyy, Yu, A., Timan, A.F.

507/20-126-5-3/69

TITLE:

Constructional Characteristics of Compact Sets in Banach

Spaces and & - Entropy

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 5, pp 927-930 (USSR)

ABSTRACT: Let F be an infinite-dimensional separable Banach space;

X $\left\{x_k^{}\right\}$ be a linear independent system closed in F. There always exist elements x, for which the best approximations

 $E^{X}(x) = \inf_{c_k} ||x - \sum_{k=0}^{n} c_k x_k||$ tend arbitrarily slowly to

zero, so that $\sup_{x \in W} E_n^X (x) , \text{ where } \mathbb{W} \text{ is a bounded set in } \mathbb{F},$

does not need tend to zero. If, however, this is the case, then # consists of elements for which the approximation valocity of the best approximations to zero possesses a common

characteristic $\mathcal{E}_{n}^{X}(W) = \sup_{x \in W} E_{n}^{X}(x)$. Let $\mathcal{E} = \Phi_{V}(\mathcal{A})$ be

Card 1/2

Constructional Characteristics of Compact Sets in Banach Spaces and & - Entropy

SOV/20-126-5-3/19

the inverse function of the ε - entropy of W. Theorem :

 $\boldsymbol{\xi}_{n-1}^{X}(\textbf{W})\leqslant \boldsymbol{\Lambda}\,\boldsymbol{\varphi}_{\textbf{W}_{Y}}(n+1),$ where \textbf{W}_{X} is a set consisting of all

 $\mathbf{x} \in \mathbf{F} \text{ for which it is } \|\mathbf{x}\| \leqslant \, \xi_{\,0}^{\,X}(\mathbb{Y}) \;\;; \quad \mathbf{E}_{\mathbf{k}}^{\,X}(\mathbf{x}) \, \leqslant \, \xi_{\,k}^{\,X}(\mathbb{Y}) \;\;.$

Seven further similar theorems for special W-classes are given.

The author mentions A.G. Vitushkin, A.E. Kolmogorov, S.N.

Bernshteyn.

There are 10 references, 6 of which are Soviet, 3 American,

and 1 French.

ASSOCIATION: Dnepropetrovskiy gosudarstvennyy universitet imeri 500-lectya

vossoyedineniya Ukrainy s Rossiyey (Dnepropetrovsk State

University imeni 300-letiya vassoyedineniya Ukraihy s Rossiyey)

March 4,1959, by A.H. Kolmogorov, Academician PRESENTED:

March 2, 1959 SUBMITTED:

Card 2/2

16(1) AUTHORS:

Ganzburg, I.M., Timan, A.F.

SOV/42-14-3-6/22

TITLE:

On Riemannian Sums for the Integrals of the Absolute Values

of Some Trigonometric Polynomials

PERIODICAL: ABSTRACT:

Uspekhi matematicheskikh nauk, 1959, Vol 14, Nr 3, pp 123-128(USSR)

Let

 $K_n(t) = \frac{\lambda_0^{(n)}}{2} + \sum_{k=1}^n \lambda_k^{(n)} \cos kt$ be a sequence of triangle

gonometric polynomials, the coefficients of which form a convex or concave numerical system, and which satisfy the con-

dition $\left|\lambda\binom{n}{k}\right|\leqslant A+B\left|\lambda\binom{n}{0}\right|$, $k=1,2,\ldots,n$ with positive constants A and B . The authors consider the sums

$$\sigma_n^r(x,\lambda) = \frac{2}{\pi r} \sum_{y=1}^r |K_n(x-t_y)|,$$

Card 1/3

307/42-14-3-6/22

6

On Riemannian Sums for the Integrals of the Absolute Values of Some Trigonometric Polynomials

where $t_{\mathcal{V}} = \frac{2 \mathcal{V} \widetilde{\mu}}{r}$, $\mathcal{V} = 0, 1, \dots, r$.

Theorem : If

 $\frac{r}{2n+1}$ is an integer, then for $n \to \infty$ it holds

the asymptotic equation

 $G_{\mathbf{n}}^{\mathbf{r}}(\mathbf{x},\lambda) = \frac{2(2\mathbf{n}+1)}{\mathbf{r}\,\widetilde{n}} \operatorname{cosec} \frac{\widetilde{n}(2\mathbf{n}+1)}{2\mathbf{r}} \left| \cos \left\{ \frac{(2\mathbf{n}+1)\widetilde{n}}{\mathbf{r}} \left(\frac{1}{2} + \left[\frac{\mathbf{r}\mathbf{x}}{2\widetilde{n}} \right] - \frac{\mathbf{r}\mathbf{x}}{2\widetilde{n}} \right) \right\} \right.$

$$\cdot \sum_{k=0}^{n} \frac{\lambda_{k}^{(n)}}{n-k+1} + O(A + B/\lambda_{0}^{(n)}) ,$$

where heta(1) is a uniformly bounded magnitude with respect to

n,x and $\frac{r}{2n+1}$

Card 2/3

On Riemannian Sums for the Integrals of the Absolute Values of Some Trigonometric Polynomials

507/42-14-3-6/22

There are 7 references, 6 of which are Soviet, and

1 American.

SUBMITTED: February 4, 1956

Card 3/3

GANZBURG, I.H.; TIMAN, A.F.

Linear processes in the approximation of functions, satisfying Lipshits' condition, by algebraic polynomials. Izv.AN SSSR. Ser.mat. 22 no.6:771-810 N-D 158. (MIRA 11:12)

1. Predstavleno akademikom S.L.Sobolevym. (Functional analysis)

AUTHOR: Timans A.F. Sov/Auton3 00/14

TITLE: On the Theorems of Jackson (O teoremakh Director)

PERIODICAL: Ukrainskly matematicheskly rhurnal (1958-Vol 10-Nt 5-pp 194 - 350 (USSR))

ABSTRACT: The lauthor shows: If it is $F(x) = \frac{1}{K} \int_{0}^{\infty} f(t) L_{r_{0}} g(x \cdot t) dt = \text{where } r > 0 \text{ and}$ $D_{r_{0}} g(t) = \frac{\infty}{k^{2}} \frac{\cos \left(kt - \frac{SR}{2}\right)}{k^{2}} \text{, and if it helds } \|f\|_{Lp} \le 1$ $(1 \le p \le \infty) \text{, then for } n \to \infty \text{ it helds}$ $E_{n}^{\#}(F)_{Lp} = 0 \left[\frac{1}{n^{2}} |O_{k}| (f + \frac{1}{n})_{Lp} \right]$ Here $E_{n}^{\#}$ denotes the beat approximation by frigonometric poly

On the Theorems of Jackson

nomials of at most noth order, and $\omega_{\rm g}$ has a to modulus to continuity.

SUBMITTED: January 10,1978 (Parguagetti well).

16(1) AUTHORS: Ganzburg, I.M. and Timan, A.F.

SOV/38-22-6-3/6

TITLE:

Linear Approximation Processes by Algebraic Polynomials

for Functions Which Satisfy the Lipschitz Condition

(Lineynyye protsessy priblizheniya funktsiy, udovletvoryayushchikh usloviyu Lipshitsa, algebraicheskimi mnogochlenami)

PERIODICAL:

Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1958, Vol 22, Nr 6, pp 771 - 810 (USSR)

ABSTRACT:

The authors already announced great parts of the present paper a longer time ago (Timan [Ref 13], Ganzburg [Ref 2]). The investigation of the approximation by arithmetic means of the partial sums of the Chebyshev series seems to be new, as well as a generalization of the Chebyshev series and approximation by means of the partial sums of this generalized series. This last method is denoted as the "linear approximation process by algebraic polynomials". The paper consists of 6 paragraphs and contains 11 theorems with partially very

There are 18 references, 15 of which are Soviet, 1 German,

1 Hungarian, and 1 Polish.

Card 1/2

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755710007-8"

Linear Approximation Processes by Algebraic Polynomials SOV/38-22-6-3/6 for Functions Which Satisfy the Lipschitz Condition

PRESENTED:

by S.L. Sobolev, Academician

SUBMITTED:

June 25, 1957

Card 2/2

AUTHOR:

Timan, A.F.

sov/38-22-3-3/9

TITLE:

On the Best Approximation of Differentiable Functions by Algebraic Polynomials on a Finite Interval of the Real Axis (O nailuchshem priblizhenii differentsiruyemykh funktsiy algebraicheskimi mnogochlenami na konechnom otrezke veshchestvennoy

osi)

PERIODICAL:

Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1958, Vol 22,Nr 3,pp 355-360 (USSR)

ABSTRACT:

Let $W^{(r)}(M)$ denote the class of the functions f(x) defined on [-1,1] which there possess a derivative $f^{(r)}(x)$ for which it is $|f^{(r)}(x)| \leqslant M$.

Theorem: For every $f(x) \in W^{(r)}(M)$ there exists a sequence of polynomials $P_n(f,x)$ with the property that

$$\frac{1}{\lim_{n \to \infty} n^r |f(x) - P_n(f,x)| \leq M \cdot K_r (\sqrt{1-x^2})^r}$$

Here it is

Card 1/2

On the Best Approximation of Differentiable Functions sov/38-22-3-3/9 by Algebraic Polynomials on a Finite Interval of the Real Axis

$$K_{r} = \frac{4}{\pi} \sum_{v=0}^{\infty} \frac{(-1)^{v(r+1)}}{(2v+1)^{r+1}}$$

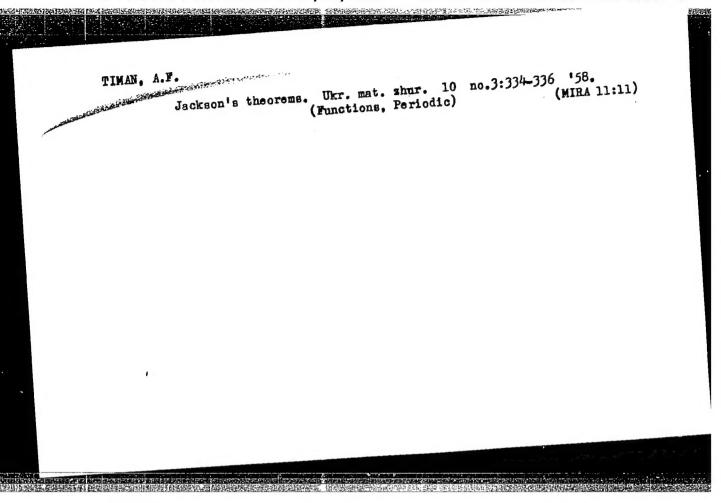
There are 11 references, 10 of which are Soviet, and 1 French.

PRESENTED: by M.A. Lavrent'yev, Academician

SUBMITTED: May 17, 1957

1. Functions--Theory 2. Approximate computation 3. Polynomials

Card 2/2



TIMAN. A.F. ..

Best approximation of differentiable functions by algebraic polynomials on a finite section of the real axis. Izv. AN SSSR. (MIRA 11:8) Ser. mat. 22 no.3:355-360 My-Je 158.

1.Predstavleno akademikom M.A. Lavrent'yevym.
(Functions of real variables) (Polynomials)